**ECO 2306 – Principles of Microeconomics**

Week 4

**Hello and Welcome to the weekly resources for ECO 2306 – Principles of Microeconomics!**

**This week is Week 4 of class, and typically in this week of the semester, your professors are covering these topics below.**  If you do not see the topics your particular section of class is learning this week, please take a look at other weekly resources listed on our website for additional topics throughout of the semester.

We also invite you to **look at the group tutoring chart on our website to see if this course has a group tutoring session offered this semester**.

If you have any questions about these study guides, group tutoring sessions, private 30 minute tutoring appointments, the Baylor Tutoring YouTube channel or any tutoring services we offer, please visit our website [www.baylor.edu/tutoring](http://www.baylor.edu/tutoring) or call our drop in center during open business hours. M-Th 9am-8pm on class days 254-710-4135.

Our main resource is going to be Principles of Microeconomics by N. Gregory Mankiw.

**Topic of the week**

**The Market Forces of Supply and Demand**

**Keywords:** market, demand, supply, normal goods, inferior goods, equilibrium.

**Concepts:**

Things will get much more interesting from now on! We will discuss markets and competition. Markets are shaped by the forces of supply and demand. These are very important economic concepts and we will use them for the rest of our studies in this course and other areas of economics.

**Markets and Competition**

A **market** is a group of buyers and sellers of a particular good or service. The buyers as a group determine the demand for the product, and the sellers as a group determine the supply of the product. Markets come in many forms. Some markets, such as those for agricultural products, are highly organized, meet at certain times, and have set rules. But most markets are minimally organized. A common example is the market for ice cream in Waco. People buy ice cream whenever they want, there are various kinds of ice cream and ice cream sellers, and there are no set prices or particular rules aside from sanitation.

Most markets in an economy are highly competitive. Buyers know there are several sellers and sellers know there are many buyers out there. Each individual actor in this market has a very little impact on the price of ice cream. A **competitive market** is a market in which there are many buyers and many sellers so that each has a negligible impact on the market price.

In order for a market to be perfectly competitive, it needs to have two characteristics: (1) The goods offered for sale are all exactly the same, and (2) the buyers and sellers are so numerous that no single buyer or seller has any influence over the market price. In this market, the players are *price takers* and any player can freely enter or exit the market at any time.

Competition forces businesses to behave efficiently and leads to cheaper products being available for consumers. Also, competition can be very harsh and difficult. A competitive market is not necessarily equitable

When a market has only one seller, and this seller sets the price, it’s called a *monopoly*. Local cable television, is a monopoly if residents of the town have only one company from which to buy cable service. Many other markets fall between the extremes of perfect competition and monopoly. An **oligopoly** forms when a handful of big firms control the entire market.

**Demand**

We study the behavior of buyers first. Consumers drive the demand side of a market. The amount of a good that buyers are willing and able to purchase is called the **quantity demanded.** This quantity follows the **law of demand**: Other things being equal, when the price of a good rises, the quantity demanded of the good falls, and when the price falls, the quantity demanded rises. This relationship in the form of a table is known as *demand schedule* and in the form of a graph as *demand curve.*



Figure 1 Demand schedule and demand curve for ice cream (source: Mankiw)

Each individual has his or her own demand schedule and curve. The market demand is the sum of all individual demands. Demand curve can experience shifts. Any change that increases demand at every price will shift the demand curve to the right, and any change that decreases demand at every price will shift the demand curve to the left.

Income, price of related goods, tastes, expectations, and the total number of buyers shift the demand curve, and changes in the price of the good itself moves us along the demand curve. Note that you should never say “shift up” or “shift down” when talking about the demand curve.



Figure 2 Shift vs Movement in demand (source: Mankiw)

With normal goods (almost everything) an increase in income will lead to an increase in demand. With inferior goods (buses, fast-food, low-quality items) an increase in income will lead to a decrease in demand.

 **Substitutes** are those goods that are consumed instead of each other, such as pork/chicken or different brands. An increase in the price of a good will lead to an increase in demand for its substitutes. **Complements** are those goods that are consumed together, such as cars/gas or burgers/burger buns. An increase in the price of a good will lead to a decrease in demand for its complements.

 Expectations about the future can affect demand. Expecting a rise in income or an increase in prices will lead to higher demand now. Tastes can change due to scientific discoveries (smoking), fads (weird diets), or public service announcements, and lead to a shift in demand curve.

**Supply**

 The total quantity of goods sold in the market by the sellers is known as supply. It follows the **law of supply**: Other things being equal, when the price of a good rises, the quantity supplied of the good also rises, and when the price falls, the quantity supplied falls as well. The table that shows the relationship between the price of a good and the quantity supplied is known as the *supply schedule* and the graphical representation of the law of supply is called the **supply curve.**

Each firm has its own supply schedule and curve. The market supply is the sum of supplies from all firms. Supply curve can experience shifts. Any change that increases supply at every price will shift the supply curve to the right, and any change that decreases supply at every price will shift the supply curve to the left. Input prices, technology, expectations, and number of sellers can shift the supply curve.

When a factor of production (land, labor, rent) becomes more expensive, the supply curve shifts to the left (less supply). Advanced technology allows firms to produce more at the same price, so the supply curve shifts to the right. Expecting higher prices in the future will reduce supply now, because firms don’t want to sell at a lower price today when they can sell at a higher price tomorrow. An increase in the number of sellers, like opening up to international markets, will increase the total amount of supply.



Figure 3 Supply schedule and supply curve (source: Mankiw)

**Supply and Demand**

 A situation in which the market price has reached the level at which quantity supplied equals quantity demanded is called an **equilibrium.** This is the point where the supply and demand curves meet. At this point we have an equilibrium price (market-clearing price) and an equilibrium quantity. The actions of buyers and sellers naturally move markets toward the equilibrium of supply and demand.



Figure 4 The equilibrium of supply and demand (source: Mankiw)

 When the quantity supplied is more than the quantity demanded, the market has a **surplus.** In this situation we see a downward pressure on the price to get rid of the excess supply. You’ve seen this in the form of clearance and sales at the supermarket. This pressure continues until the market reaches the equilibrium price.

 When the quantity demanded is more than the quantity supplied, the market has a **shortage**. In this situation we see and upward pressure on the price to get rid of the excess demand. You see this when Baylor plays TCU and hotel room prices in Waco skyrocket. This pressure continues until the market reaches the equilibrium price.

 

Figure 5 Markets not at equilibrium (source: Mankiw)

 The **law of supply and demand** says the price of any good adjusts to bring the quantity supplied and the quantity demanded for that good into balance. In most markets surpluses and shortages are temporary.

 There are three steps to analyzing changes in equilibrium:

 1. Decide whether the event shifts the supply or demand curve (or perhaps both).

 2. Decide in which direction the curve shifts.

3. Use the supply-and-demand diagram to see how the shift changes the equilibrium price and quantity.

An event that raises quantity demanded at any given price shifts the demand curve to the right. The equilibrium price and the equilibrium quantity both rise. For example, an abnormally hot summer causes buyers to demand more ice cream. This will lead to a higher equilibrium price and a higher equilibrium quantity.

An event that reduces quantity supplied at any given price shifts the supply curve to the left. The equilibrium price rises, and the equilibrium quantity falls. For example, an increase in the price of sugar (an input) causes sellers to supply less ice cream so the supply curve shifts to the left. This leads to a higher equilibrium price and a lower equilibrium quantity.



Figure 6 How and increase in demand affects the equilibrium (Source: Mankiw)



Figure 7 How a decrease in supply affects the equilibrium (source: Mankiw)

 Now imagine one summer there is a hurricane destroys part of the sugarcane crop and we see higher price of sugar. At the same time, there is a terrible heat wave. The heat wave will shift the demand curve to the right and the hurricane will shift the supply curve to the left. The equilibrium price is guaranteed to increase. But demand is ambiguous. If demand increases substantially while supply falls just a little then the equilibrium quantity rises. If supply falls substantially while demand rises just a little, then the equilibrium quantity falls.

 In a free market, the forces of supply and demand do the job of rationing the scarce resources of a society. Think of beach front land. Beach front property is priced in such a way that the number of available plots exactly equal the number of buyers who are willing and able to purchase the plots. Since supply and demand do a good job at rationing scarce resources, most economists are against government interference in pricing.



Figure 8 A shift in both supply and demand (source: Mankiw)

**What you might struggle with**

We discussed different scenarios about supply and demand and their effects on the market. Here’s a table to help you with remembering them.



Figure 9 What Happens to Price and Quantity When Supply or Demand Shifts? (Source: Mankiw)

**Check your learning**

1. New cars are normal goods. How does each of the follow affect the curves?

a. Price of gasoline rises.

b. Price of steel falls.

c. Public transportation becomes cheaper.

d. Auto workers accept lower wages.

e. Automobile insurance becomes more expensive.

2. Ketchup is a complement (as well as a condiment) for hot dogs. If the price of hot dogs rises, what happens in the market for ketchup? For tomatoes? For tomato juice? For orange juice?

3. Over the past 40 years, technological advances have reduced the cost of computer chips. How do you think this has affected the market for computers? For computer software? For typewriters?

4. Consider the markets for film streaming services, TV screens, and tickets at movie theaters.

a. For each pair, identify whether they are complements or substitutes:

• Film streaming and TV screens

• Film streaming and movie tickets

• TV screens and movie tickets

b. Suppose a technological advance reduces the cost of manufacturing TV screens. Draw a diagram to show what happens in the market for TV screens.

c. How does the change in the market for TV screens affect the markets for film streaming and movie tickets?

5. The market for pizza has the following demand and supply schedules:



a. Graph the demand and supply curves. What are the equilibrium price and quantity in this market?

b. If the actual price in this market were *above* the equilibrium price, what would drive the market toward the equilibrium?

c. If the actual price in this market were *below* the equilibrium price, what would drive the market toward the equilibrium?

6. Consider the following events: Scientists reveal that eating oranges decreases the risk of diabetes, and at the same time, farmers use a new fertilizer that makes orange trees produce more oranges. Illustrate and explain what effect these changes have on the equilibrium price and quantity of oranges.

7. Suppose that the price of basketball tickets at your college is determined by market forces. Currently, the demand and supply schedules are as follows:



a. Draw the demand and supply curves. What is unusual about this supply curve? Why might this be true?

b. What are the equilibrium price and quantity of tickets?

c. Your college plans to increase total enrollment next year by 5,000 students. The additional students will have the following demand schedule:



Now add the old demand schedule and the demand schedule for the new students to calculate the new demand schedule for the entire college. What will be the new equilibrium price and quantity?

**Answers**

1. a. demand shifts left, b. supply shifts right, c. demand shifts left, d. supply shifts right, demand shifts left.

2. There will be less demand for ketchup, this leads to lower demand for tomatoes, this leads to lower prices in the tomato market, this increases the supply of tomato juice. I don’t think of tomato juice and orange juice as substitutes, so this whole thing has no effect on orange juice.

3. Increase in the supply of computers has lowered their prices, that has increased the demand for computers and their complements (software). Typewriters are substitutes for computers, so the demand for typewriters has decreased.

4. a. Film streaming and TV screens: compliments (if you stream on you TV)

Film streaming and movie tickets: substitutes

TV screens and movie tickets: substitutes

b. 

c. Since more TVs are in demand, people buy more streaming subscriptions and fewer movie tickets.

5.

a. 

Equilibrium: 81 pizzas at $6

b. The low demand and excess supply would drive the price down

c. The low supply and excess demand would drive the price up

6. Supply and demand both increase, so there is an increase in the equilibrium quantity. If the scientific discovery increases demand a little, but farmers produce a lot more, the equilibrium price will be lower. If farmers produce a little more, but people demand a lot more, the equilibrium price will be higher.

7. a.



There’s a constant supply of tickets regardless of the price. This is because the arena has a constant capacity.

b. 8000 tickets at $8 each

c.



8000 tickets at $12 each

Thanks for checking out these weekly resources!

Don’t forget to check out our website for group tutoring times, video tutorials and lots of other resources: [www.baylor.edu/tutoring](http://www.baylor.edu/tutoring) ! Answers to check your learning questions are below!